



### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Steven L. Scott et al.

Title:

MULTISTREAM PROCESSING MEMORY-AND BARRIER-SYNCHRONIZATION

METHOD AND APPARATUS

Docket No.:

1376.733US1

August 18, 2003

Examiner:

Filed:

Unknown

Serial No.: 10/643,741

Due Date: N/A

Group Art Unit: 2153

#### MS Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

We are transmitting herewith the following attached items (as indicated with an "X"):

- X Return postcard.
- X Communication Concerning Related Application (1 pg.).
- X Supplemental Information Disclosure Statement (2 pgs.), Form 1449 (2 pgs.), and copies of 11 cited documents.

If not provided for in a separate paper filed herewith, Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

Customer Number 21186

Atty: Thomas F. Brennan

Reg. No. 35,075

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 1774day of February, 2006.

Name

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

(GENERAL)

FFR 2 1 2006 10/643,741

**PATENT** 

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Steven L. Scott et al.

Serial No.:

10/643,741

Group Art Unit: 2153

August 18, 2003

Docket: 1376.733US1

Examiner: Unknown

Filed: Title:

MULTISTREAM PROCESSING MEMORY-AND BARRIER-

SYNCHRONIZATION METHOD AND APPARATUS

### COMMUNICATION CONCERNING RELATED APPLICATION

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Applicants would like to bring to the Examiner's attention the following related application in the above-identified patent application:

Serial/Patent No. Filing Date/Issue Date September 4, 2002

Attorney Docket

Title

10/235898 6,922,766

1376.710US1

REMOTE TRANSLATION

MECHANISM FOR A MULTI-NODE

SYSTEM

Continuations and divisionals may be later filed on the cases listed above, or cited to the Examiner in any previous Communication Concerning Related Applications. Applicants request that the Examiner review all continuations and divisionals of the above-listed or previously-cited patent applications before allowing the claims of the present patent application.

> Respectfully submitted, STEVEN L. SCOTT ET AL.

By Applicants' Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

P.O. Box 2938

Minneapolis, MN 55402

(612) 373-6909

Date Feb 17, 2006

Reg. No. 35,075

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 1774 day of February, 2006.

Signature





# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Steven L. Scott et al.

Examiner:

Unknown

Serial No.:

10/643,741

Group Art Unit:

2153

Filed:

August 18, 2003

Docket:

1376.733US1

Title:

MULTISTREAM PROCESSING MEMORY-AND BARRIER-

SYNCHRONIZATION METHOD AND APPARATUS

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

MS Amendment Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 et. seq., the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicant respectfully requests that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicant requests that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

The attached 1449 lists the Carlile document, even though this document was cited in the IDS filed on October 12, 2004. The Carlile citation on the previously filed 1449 contained a typographical error. The citation on the attached 1449 contains the correct spelling, and should be substituted.

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Supplemental Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Supplemental Information Disclosure Statement considered.

Page 2 Dkt: 1376.733US1

Title: MULTISTREAM PROCESSING MEMORY-AND BARRIER-SYNCHRONIZATION METHOD AND APPARATUS

Pursuant to 37 C.F.R. 1.98(a)(2), Applicant believes that copies of cited U.S. Patents and Published Applications are no longer required to be provided to the Office. Notification of this change was provided in the United States Patent and Trademark Office OG Notices dated October 12, 2004. Thus, Applicant has not included copies of any U.S. Patents or Published Applications cited with this submission. Should the Office require copies to be provided, Applicant respectfully requests that notice of such requirement be directed to Applicant's below-signed representative. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

The Examiner is invited to contact the Applicant's Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

STEVEN L. SCOTT ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

P.O. Box 2938

Minneapolis, MN 55402

(612) 373-6909

Date (18/17, 2006

Thomas F. Brennan

Reg. No. 35,075

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 177 day of February, 2006.

Name

Signature

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as joany sheets as necessary)

FEB 2 1 2006 Sheet 1 of 2

| Application Number    | 10/643,741      |
|-----------------------|-----------------|
| Filing Date           | August 18, 2003 |
| First Named Inventor  | Scott, Steven   |
| Group Art Unit        | 2153            |
| Examiner Name         | Unknown         |
| Attorney Docket No: 1 | 376.733US1      |

|                       |                     | US PAT              | ENT DOCUMENTS                                   |                               |
|-----------------------|---------------------|---------------------|---|-------------------------------|
| Examiner<br>Initial * | USP Document Number | Publication<br>Date | Name of Patentee or Applicant of cited Document | Filing Date<br>If Appropriate |
|                       | US-2002/0169938A1   | 11/14/2002          | Scott, S. L., et al.                            | 12/14/2001                    |
|                       | US-2002/0172199A1   | 11/21/2002          | Scott, S. L., et al.                            | 12/14/2001                    |
|                       | US-2003/0005380A1   | 01/02/2003          | Nguyen, H. T., et al.                           | 06/29/2001                    |
|                       | US-2005/0044128A1   | 02/24/2005          | Scott, S. L., et al.                            | 08/18/2003                    |
|                       | US-2005/0044340A1   | 02/24/2005          | Sheets, K., et al.                              | 08/18/2003                    |
|                       | US-4,541,046        | 09/10/1985          | Nagashima, S., et al.                           | 03/23/1982                    |
| _                     | US-4,888,679        | 12/19/1989          | Fossum, T., et al.                              | 01/11/1988                    |
|                       | US-5,068,851        | 11/26/1991          | Bruckert, W., et al.                            | 08/01/1989                    |
| ***                   | US-5,197,130        | 03/23/1993          | Chen, S. S., et al.                             | 12/29/1989                    |
|                       | US-5,418,916        | 05/23/1995          | Hall, B. A., et al.                             | 10/04/1990                    |
|                       | US-5,430,850        | 07/04/1995          | Papadopoulos, G. M., et al.                     | 07/22/1991                    |
|                       | US-5,430,884        | 07/04/1995          | Beard, Douglas R., et al.                       | 06/11/1990                    |
|                       | US-5,446,915        | 08/29/1995          | Pierce, P. R.                                   | 05/25/1993                    |
|                       | US-5,560,029        | 09/24/1996          | Papadopoulos, G. M., et al.                     | 05/31/1994                    |
|                       | US-5,640,524        | 06/17/1997          | Beard, D. R., et al.                            | 02/28/1995                    |
|                       | US-5,649,141        | 07/15/1997          | Yamazaki, T.                                    | 06/30/1995                    |
|                       | US-5,787,494        | 07/28/1998          | Delano, E. R., et al.                           | 09/22/1995                    |
|                       | US-5,860,146        | 01/12/1999          | Vishin, S., et al.                              | 06/25/1996                    |
|                       | US-5,897,664        | 04/27/1999          | Nesheim, W. A., et al.                          | 07/01/1996                    |
|                       | US-6,003,123        | 12/14/1999          | Carter, N. P., et al.                           | 02/10/1998                    |
|                       | US-6,088,701        | 07/11/2000          | Whaley, K. M., et al.                           | 11/14/1997                    |
|                       | US-6,101,590        | 08/08/2000          | Hansen, C.                                      | 10/10/1995                    |
|                       | US-6,105,113        | 08/15/2000          | Schimmel, C. F.                                 | 08/21/1997                    |
|                       | US-6,490,671        | 12/03/2002          | Frank, R. L., et al.                            | 05/28/1999                    |
|                       | US-6,684,305        | 01/27/2004          | Deneau, T. M.                                   | 04/24/2001                    |
|                       | US-6,782,468        | 08/24/2004          | Nakazato, S.                                    | 12/13/1999                    |
|                       | US-6,816,960        | 11/09/2004          | Koyanagi, H.                                    | 07/10/2001                    |
|                       | US-6,922,766        | 07/26/2005          | Scott, S. L.                                    | 09/04/2002                    |
|                       | US-6,925,547        | 08/02/2005          | Scott, S. L., et al.                            | 12/14/2001                    |
| <del>.</del>          | US-6,976,155        | 12/13/2005          | Drysdale, T. G., et al.                         | 06/12/2001                    |

|                       | OTHER                   | R DOCUMENTS NON PATENT LITERATURE DOCUMENTS   |    |
|-----------------------|-------------------------|---|----|
| Examiner<br>Initials* | Cite<br>No <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T² |
|                       |                         | "Cray Assembly Language (CAL) for Cray X1™ Systems Reference Manual", Section 2.6, Memory Ordering, http://docs.cray.com/books/S-2314-51/index.html, (June, 2003), 302 pgs.   |    |
|                       |                         | "ECPE 4504: Computer Organization Lecture 12: Computer Arithmetic", <u>The</u> Bradley Department of Electrical Engineering, (Oct. 17, 2000), 12 pgs.   |    |

**EXAMINER** 

**DATE CONSIDERED** 

PTC/S8/08A(10-01)
Approved for use through 10/31/2022, OMB 551-0031
US Patent & Trademark Office U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons ere required to respond to a collection of information unless it contains a valid OMS control number. Substitute for form 1449A/PTO Complete if Known INFORMATION DISCLOSURE 10/643,741 **Application Number** STATEMENT BY APPLICANT (Use as many sheets as necessary) **Filing Date** August 18, 2003 Scott, Steven **First Named Inventor Group Art Unit** 2153 **Examiner Name** Unknown Attorney Docket No: 1376.733US1 Sheet 2 of 2

|                       | OTHER                   | R DOCUMENTS NON PATENT LITERATURE DOCUMENTS   |                |
|-----------------------|-------------------------|---|----------------|
| Examiner<br>Initials* | Cite<br>No <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>2</sup> |
|                       |                         | ABTS, D, "So Many States, So Little Time: Verifying Memory Coherence in the Cray X1", Parallel and Distributed Processing Symposium, (April 22, 2003), 11-20  |                |
|                       |                         | CARLILE, BRADLEY R., "Algorithms and Design: The CRAY APP Shared-Memory System", COMPCON Spring '93. Digest of Papers., (February 22, 1993), 312-320  |                |
|                       |                         | CHEN, Y., et al., "UTLB: A Mechanism for Address Translation on Network Interfaces", Proceedings of the Eighth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), (1998),193-204                       |                |
|                       |                         | ERNST, D., et al., "Cyclone: A Broadcast-Free Dynamic Instruction Scheduler with Selective Replay", 30th Annual International Symposium on Computer Architecture (ISCA-2003), (June, 2003), 10 pgs.   |                |
|                       |                         | KONTOTHANASSIS, L., et al., "VM-Based Shared Memory on Low-Latency, Remote-Memory-Access Networks", Proceedings of the ACM ISCA '97, (1997), 157-169  |                |
|                       |                         | PATTERSON, DAVID A., et al., <u>Computer Architecture: A Quantitative</u> <u>Approach</u> , Second Edition, Morgan Kaufmann Publishers, Inc., San Francisco, CA,(1996), 39-41   |                |
|                       |                         | PATTERSON, DAVID A., et al., <u>Computer Architecture: A Quantitative Approach</u> , 2nd Edition, Morgan Kaufmann Publishers, Inc., San Francisco, CA,(1996), 179-187, 373-384  |                |
|                       |                         | SCOTT, S., "Synchronization and Communication in the T3E Multiprocessor", ASPLOS, Volume II, (1996),pp. 26-36   |                |
|                       |                         | WOOD, D. A., et al., "An In-Cache Address Translation Mechanism", <u>Proceedings of the 13th Annual International Symposium on Computer</u> <u>Architecture,</u> (1986), 358-365  |                |

**EXAMINER DATE CONSIDERED**